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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/961,150	09/24/2001	Akira Tsuboyama	684.3253	5363

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EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT	PAPER NUMBER
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1774

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DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS10

Office Action Summary

Application No.

09/961,150

Applicant(s)

TSUBOYAMA ET AL.

Examiner

Marie R. Yamnitzky

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-- **Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2003 and 09 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. This Office action is in response to applicants' amendment received May 19, 2003 (Paper No. 7), which amends the specification, cancels claims 1-11 and adds claim 12.

Claim 12 is pending.

2. The examiner acknowledges receipt of certified translations of applicants' two foreign priority documents (translations received May 19, 2003).

The examiner acknowledges receipt of a supplemental information disclosure statement (received June 09, 2003).

3. In Paper No. 7, applicants confirm the prior provisional election of species. No traversal of the election requirement is set forth. Accordingly, the election of species is now treated as an election without traverse (MPEP § 818.03(a)).

Claim 12 reads on the elected species because formula (4) reads on the elected species.

4. The objection to the disclosure as set forth in Paper No. 6 is overcome by applicants' amendment.

All claim rejections set forth in Paper No. 6 are rendered moot by the cancellation of the rejected claims.

5. Claim 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in

the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The application as originally filed provides insufficient support for the generic recitation of "alkyl group", "alkoxy group" and "a halogen" as recited in parts (i) and (ii) of claim 12, and provides insufficient support for the compounds of formulae (1)-(4) as further defined by part (iii) of claim 12.

With respect to alkyl and alkoxy groups, the present claim language places no limitation on the size of these groups whereas the application as originally filed only provides support for alkyl groups having 1-20 carbon atoms and alkoxy groups having 1-20 carbon atoms.

With respect to substitution with a halogen, the present claim language allows for substitution by any halogen whereas the application as originally filed only provides support for substitution by a fluorine atom.

With respect to part (iii) of the claim, the examiner does not find this language in the application as originally filed. There are at least two possible interpretations of this claim language, neither of which is fully supported by the application as originally filed.

If part (iii) is interpreted as allowing a $-CH=$ of any of the aromatic rings of formulae (1)-(4) to be replaced by $-N=$, the language is not fully supported because there is no disclosure of a CyC1 or CyC2 group that is a thiophene, benzothiophene or benzene ring in which a $-CH=$ of the ring is replaced by $-N=$. (The application as originally filed does, however, provide support for compounds of formulae (1)-(4) in which one $-CH=$ of one or both pyridine rings is replaced by $-N=$; see Pd, Py1, Pa and Py2 on page 19 of the specification.)

If part (iii) is interpreted as allowing the hydrogen of a $-CH=$ of any of the aromatic rings of formulae (1)-(4) to be replaced by a nitrogen, the language is not fully supported because the only substituent originally disclosed for CyN1, CyN2, CyC1 and CyC2 that would provide a nitrogen in place of a hydrogen of $-CH=$ is a nitro group. There is no disclosure of other substituents such as amino groups that would provide a nitrogen directly attached to a carbon of the aromatic groups.

6. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Parts (i) and (iii) recite "which is optionally substituted with a halogen". It is not clear if "which" refers only to the trimethylsilyl group, or to each of the alkyl group, alkoxy group and trimethylsilyl group.

The scope of aromatic groups having a CH group which is optionally substituted with a nitrogen, as allowed by part (iii), is not clear. It is not clear if optional substitution with a nitrogen means that a $-CH=$ group is replaced by $-N=$, or if this means that the hydrogen of a $-CH=$ group is replaced by a nitrogen. If this language means that the hydrogen of a $-CH=$ group is replaced by a nitrogen, the claim is also indefinite because the claim does not specify what fills the valencies of the nitrogen.

It is not clear if occurrences of "a" and "an" in parts (i)-(iii) are to be interpreted as limiting to "one". For example, in requiring the compounds of formulae (1) and (2) to be

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substituted with an alkyl group, an alkoxy group or a trimethylsilyl group, it is not clear if the compounds of formulae (1) and (2) may be substituted with more than one alkyl, alkoxy and/or trimethylsilyl group.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maestri et al., "Photochemistry and Luminescence of Cyclometallated Complexes", pp. 1-68 in *Advances in Photochemistry*, Volume 17 (1992).

The second platinum compound shown on page 7 of the reference wherein $R = \text{Si}(\text{CH}_3)_3$ is a compound represented by present formula (1) that is substituted with two trimethylsilyl groups.

While claim 12 is drawn to a luminescence device, the only positive limitation of the device is a layer comprising a metal coordination compound. Maestri et al. disclose that various platinum complexes exhibit luminescence in a rigid matrix at 77 K. Although Maestri et al. do not explicitly disclose the trimethylsilyl-substituted platinum complex in a rigid matrix, one of ordinary skill in the art would have reasonably expected the substituted platinum complex to

exhibit luminescence in a rigid matrix at 77 K since the corresponding unsubstituted complex (Pt(tpy)₂) exhibits luminescence in a rigid matrix at 77 K.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson et al. (US 2002/0034656 A1):

Thompson et al. disclose unsubstituted compounds of present formulae (1) and (2) for use in a light-emitting device. Thompson et al. do not disclose any specific examples of compounds of formulae (1) and (2) which are substituted as required by part (i) of present claim 12.

Thompson et al. disclose various light-emitting metal coordination compounds for use in a light-emitting device, some of which comprise alkyl or alkoxy substituents. One of ordinary skill in the art at the time of the invention, considering Thompson's teachings as a whole, would have been motivated to make platinum compounds in addition to the specific unsubstituted platinum compounds disclosed by Thompson in order to provide a variety of metal coordination compounds suitable for use in a light-emitting device. One of ordinary skill in the art at the time of the invention, considering Thompson's teachings as a whole, would have reasonably expected that platinum compounds similar to the specific unsubstituted platinum compounds disclosed by Thompson, with the addition of one or more alkyl and/or alkoxy substituents, would have properties similar to those of the unsubstituted compounds and would be suitable for use in a light-emitting device.

With respect to the compound of present formula (3), Thompson et al. do not disclose this compound but do teach that benzothienylpyridine can be used to make platinum metal

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coordination compounds, as can thienylpyridine (see paragraph [0183]). One of ordinary skill in the art at the time of the invention would have reasonably expected that a platinum compound similar to the second formula shown in paragraph [0123] but containing benzothienylpyridine ligands in place of thienylpyridine ligands would also be light-emitting and would be suitable for use in a light-emitting device.

10. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (703) 308-4413. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

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The current fax numbers for Art Unit 1774 are (703) 872-9311 for official after final faxes and (703) 872-9310 or (703) 305-5408 for all other official faxes. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (703) 872-9041.)

MRY

July 29, 2003

Handwritten signature of Marie R. Yamnitzky in cursive script.

MARIE YAMNITZKY
PRIMARY EXAMINER

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